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Off. Act. Dated: 11/26/2003

### **REMARKS/ARGUMENTS**

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. **Rejection of Claims 24 and 29 under 35 U.S.C. §112, second paragraph.**

Claims 24 and 29 rejected under 35 U.S.C. §112, second paragraph as being indefinite. The Examiner states, "it is not clear what structure is intended by the limitation 'nitrogen' recited in apparatus Claims 24 and 29.

In response, Applicant has amended Claim 24 and Claim 29 to recite with more specificity the structural relationship between the elements of the Applicant's claimed invention. Specifically, the Applicant has referenced a source of nitrogen gas to provide structure. Therefore, the Applicant respectfully submits that Claims 24 and 29 are now cast in proper form under 35 U.S.C. § 112.

2. **Rejection of Claims under 35 U.S.C. § 102(b).**

Claims 19-21, 23-26, 28 and 29 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Juarez et al* (U.S. No. 6,233,844 B1) without comment.

In response to the rejection, the Applicant has amended independent Claims 19 and 25 to include limitations that are not found in the Juarez reference. In particular, Claims 19 and 25 have been amended to include the limitation of "a support substrate configured to separate pieces of food product." Such structure is not present in the reference cited by the Examiner. Therefore, the Applicant respectfully submits that Claims 19 and 25, as well as the claims that depend therefrom, recite one or more elements not found in the cited reference and are not anticipated by the Juarez reference.

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3. Rejection of Claims under 35 U.S.C. § 103(a).

A. Rejection of Claims 30-34, 38-43, 47-52 and 56-61 under 35 U.S.C. § 103(a).

Claims 22, 27, 30-34, 38-43, 47-52 and 56-61 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Juarez et al* (U.S. No. 6,233,844 B1) in view of *Meldrum* (U.S. No. 6,523,276). In support of the rejection the Examiner states:

"Juarez et al disclose the claimed apparatus except for the plurality of drying zones and the plurality of heat sources. However, Meldrum shows the conventional expedient of drying a food product by means of a drying system comprising a plurality of drying zones and a plurality of heat sources... Therefore, it would have been obvious to modify the apparatus of Juarez et al such that a plurality of heating zones and a plurality of heat sources are formed within the drying housing as per the teaching of Meldrum..."

Applicant respectfully disagrees that the claimed invention is disclosed in Juarez or a combination of Juarez and Meldrum and that there is no suggestion, incentive or motivation to combine these patents. Of the group of rejected claims, Claims 30, 40, 49, 58 and 59 are independent.

First, obviousness is tested by "what the combined teaching of the references would have suggested to those of ordinary skill in the art" (See *In re Keller*, 208 U.S.P.Q. 871 (CCPA 1981)), but it "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." Thus, "teachings of references can be combined only if there is some suggestion or incentive to do so" and that combination must produce the invention as claimed. Second, "in order to rely on a reference as a basis for rejection of an Applicant's invention, the reference must either be in the field of Applicant's endeavor or, if not, then be reasonable pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

In the present case, neither Juarez nor Meldrum alone or in combination

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discloses a "substrate that supports and separates" pieces of material to be dehydrated as claimed. Nor is there any suggestion, incentive or motivation provided in either reference to include a substrate. Furthermore, the proposed combination of Juarez and Meldrum does not provide a plurality of drying zones with a plurality of heat sources as claimed and there is no incentive, suggestion or motivation found in Meldrum or Juarez to modify Juarez to include drying zones or substrate.

Initially, it should be noted that Juarez discloses an apparatus where the ultrasound source is in *direct contact* with the food and *compresses* the food during processing. Meldrum, on the other hand is not directed to food dehydration but rather to the application of thin films to fruits to extend the shelf life of the fruit in the marketplace.

Juarez includes a plurality of ultrasonic diffusers configured like plates (5) that are connected to sound wave generators (17) and are in direct contact with the food products. At Col. 2, lines 13-17 of Juarez, it states:

"[T]his object is achieved by the fact that ultrasonic waves are diffused in the product by an intermediary of vibrating plates which are *put in direct contact with the products*. Preferably, a static pressure is exerted on the products by these plates." (emphasis added)

The food product is actually compressed by the static pressure exerted by the plates (5) during dehydration. At Col. 4, lines 23-27 of Juarez it provides:

"Due to the continuous or even increasing static pressure as dehydration is carried out, the contact between diffusing plates 5 and the pieces remains guaranteed and the pieces are gently *compressed into the shape of the flat disks*." (emphasis added)

Applicant submits that the apparatus disclosed in the Juarez patent could not be modified alone or be combined with Meldrum to produce the invention as claimed in independent claims 30, 40, 49, 58 and 59 because of these limitations. In particular, the ultrasonic plates (5) could not be brought in contact with the materials on the substrate or compress the materials as disclosed in Juarez.

Secondly, there is no suggestion, incentive or motivation found in either Juarez

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or Meldrum to combine the teachings of these references. Meldrum discloses a system for applying a layer of a "solute laden slurry" on the external surface of an item of produce to "create a protective stratum" on the produce to extend shelf life. (abstract). The actual produce is not dried in Meldrum, only the thin layer of material that has been applied to the produce is dried. Drying a thin film is fundamentally different than dehydrating food. The purpose of the Meldrum apparatus is to increase the shelf life of fresh fruit or produce. Dehydration of the Meldrum items of produce is counter to the teachings and purpose of the application of the thin films in Meldrum.

Thirdly, there is nothing in Juarez that would provide any suggestion, incentive or motivation to create multiple drying zones. Applicant submits that the drying conditions that are disclosed by Juarez are consistent throughout the housing from one end of the apparatus to the other. Juarez discloses only one drying zone with air circulating the length of the housing. Consequently, there is no need to control the airflow direction in Juarez because it will work equally well in either direction. Nor is there any teaching concerning the velocity of the airflow or the temperature, humidity or other operating parameter found in Juarez that provide any incentive to create more than one drying zone.

Juarez does not disclose a range of air velocities, ultrasonic frequencies or time of exposure. Meldrum provides heating steps from "50 °C to 150 °C for about 0.1 seconds to about 15 seconds." (Col. 9, lines 45-50.) These exposure times are for drying thin films by initiation crystallization in Meldrum and do not provide any incentive to modify Juarez to create multiple drying zones for dehydration. (Col.10, lines 13-15)..

Applicant submits that the suggestion or incentive for the establishment of multiple drying zones with multiple air heating sources comes from the Applicant rather than Juarez or Meldrum alone or in combination. Nor is there any suggestion, teaching or motivation that could be derived from those references which would cause a person having ordinary skill in the art to so modify Meldrum's thin film application system to dehydrate food or to provide a substrate. Accordingly, Claims 30, 40, 49, 58 and 59

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recite structure that is patentable over the cited references for purposes of 35 U.S.C. § 103.

B. Rejection of Claims 22, 27 35-37, 44-46 and 53-55 under 35 U.S.C. § 103(a).

Claims 22, 27, 35-37, 44-46, and 53-55 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Juarez et al* (U.S. No. 6,233,844 B1) alone.

(1) Claims 22 and 27 are nonobvious.

In support of the rejection of these claims, the Examiner stated, "It would have been obvious to modify the ultrasonic wave emitting means of *Juarez et al* such that the food products are exposed to ultrasound at a frequency within the range of 20 KHz to 100 KHz for approximately 15 to 90 minutes."

As discussed above, *Juarez* discloses a plurality of plates (5) that are in contact with the pieces of food and emit ultrasonic energy as well as compress the pieces. However, *Juarez* does not disclose a frequency range or a time of exposure. Since the *Juarez* apparatus cannot be modified to process food pieces on a substrate as claimed in the independent claimed, the claims cannot be obvious in view of the *Juarez* patent disclosure.

Accordingly, claims 22 and 27 recite structure that is patentable over the cited references for purposes of 35 U.S.C. § 103.

(2) Claims 35-37, 44-46 and 53-55 are nonobvious.

The Applicant submits that the Examiner has not established a prima facie case of obviousness with respect to Claims 33-37, 44-46 and 53-55, which pertain to the substrate and a conveyor with a plurality of vanes or a container to hold the substrate, for several reasons. First, these claims depend from an independent claim that was shown above to be patentable.

Second, *Juarez* has not provided any structure that corresponds to a substrate, vanned conveyor or container to hold the substrate or even identified the need for these structures. Nor is there any suggestion, teaching or motivation that could be derived

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from that reference which would cause a person having ordinary skill in the art to modify the Juarez apparatus to include these structures. In fact, Juarez could not function with a substrate, vaned conveyor or containers because of the plates (5). Therefore, Claims 33-37, 44-46 and 53-55 recite structure that is patentable over Juarez for purposes of 35 U.S.C. § 103.

4. New Claims

New Claims 62-68 also includes the limitation of a substrate that separates and supports material for desiccation. The substrate and material are exposed to plurality of drying zones at a variety of air flow volumes or temperatures. Since Juarez and Meldrum patents alone or the combination do not disclose or suggest the invention as claimed, the new Claims 62-68 should also be patentable.

5. Conclusion.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

The Applicant also respectfully requests a telephone interview with the Examiner in the event that there are questions regarding this response, or if the next action on the merits is not an allowance of all pending claims.

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Respectfully submitted,

John P. O'Banion, Reg. No. 33,201  
O'BANION & RITCHEY LLP  
400 Capitol Mall, Suite 1550  
Sacramento, CA 95814  
(916) 498-1010